

REMARKS

Claims 1-6, 8-11 and 13-15 are pending in the application and are under final rejection.

Claims 1, 4, 10, and 11 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over JP '847. Claims 2 and 3 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '847 in view of JP '729. Claims 5, 6, 8, 9, and 13-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP '729.

CASE BACKGROUND

This case was originally assigned to Examiner Andrew E. Wessman, and subsequently assigned to the present Examiner, Harry D. Wilkins, III.

Examiner Wessman issued a final rejection on November 8, 2002, after which the RCE was filed. Subsequently, Examiner Wessman issued another final rejection on May 2, 2003. Shortly thereafter, the undersigned attempted to contact Examiner Wessman and was advised that the file was transferred to Examiner Wilkins.

The undersigned expressed the concern that the final rejection after filing of the RCE appeared to have been issued without any consideration of the previously-filed response.

During a telephone conference on July 9, 2003, experimental results demonstrating the criticality of certain limitations were discussed with Examiner Wilkins. It was the understanding of the undersigned that such criticality was understood and sufficient to meet the burden under 35 U.S.C. § 103, but needed to be in the record. By

response dated July 10, 2003, such record was made. Subsequently, this present final rejection was issued.

ISSUE OF FINALITY

A subsequent action on the merits should not be final when the Examiner introduces a new ground of rejection that is neither necessitated by Applicant's amendment of the claims nor based on information submitted in an Information Disclosure Statement filed under 37 C.F.R. § 1.97(c). MPEP 706.07(a).

In the present application, Applicant has not presented any further amendments in the prior response, but has conformed the record to the requirements as set forth in the telephone interview of July 2003. Applicant has not amended the claims in response to the previous action. Applicant has not submitted an Information Disclosure Statement.

In the present final rejection, the Examiner has applied a new rejection to Claims 1, 4, 10, and 11 on the basis of obviousness in view of JP '847 and a new rejection to Claims 5, 6, 8, 9, and 13-15 for obviousness in view of JP '729.

Further, the Examiner has set forth a new requirement and imposed a burden on Applicant under 35 U.S.C. § 103, which is not in conformance with the law. More specifically, Page 7 of the present Office Action states that "It is unclear how, by changing the ratio of Au:Al from 3.65 to 3.66, the properties of the alloy are changed from unsatisfactory to satisfactory."

The Office Action essentially admits that Applicant has met the burden of proof to demonstrate criticality. However, the theory as to criticality is required by such Office Action.

It has never been a requirement under the law that the theory upon which the invention operates needs to be understood or explained. The requirement to explain theory in the present Office Action is inappropriate; and statements within the Office Action reveal that the criticality has already been demonstrated. Accordingly, the criticality being admitted, the requirement to understand the mechanism leading to the criticality being imposed as a requirement is improper.

It is well established under the law that an inventor need not understand the scientific mechanism in order to place an invention into the patent system. See Newman v Quigg, 877 F2d 1575, 1581 (Fed Cir, 1980): "It is not a requirement of patentability that an inventor correctly set forth, or even know, how or why the invention works"; Fromson v Advance Offset Plate, Inc., 720 F2d 1565, 1670 (Fed Cir, 1983): "It is axiomatic that an inventor need not comprehend the scientific principles on which the practical effectiveness of his invention rests."

Accordingly, for the various reasons set forth above, Applicant respectfully requests that the finality of the Office Action be withdrawn.

REJECTION OF CLAIMS 1, 4, 10, AND 11 UNDER 35 U.S.C. § 103(a) AS BEING UNPATENTABLE OVER JP '847

Claims 1, 4, 10, and 11 were rejected on the basis that JP '847 teaches a broad range of compositions for jewelry alloy containing 15 to 30 wt% aluminum with the remainder being gold. The current Office Action states that the attempt to demonstrate unexpected results, to rebut the *prima facie* case of obviousness, is unconvincing.

This rejection is given despite ample evidence on the record and including experimental results comparison table previously submitted and specifically discussed with the Examiner on July 9, 2003, such evidence being contained in the Amendment After Final filed via facsimile on January 29, 2003.

Such evidence shows that a control having a composition of gold and aluminum resulting in a ratio of Au:Al of 3.65 has unacceptable metallurgical properties since it was hard, brittle and had surface fractures. This was contrasted in the results Comparison Table showing examples of the present invention where higher ratios of aluminum to gold resulted in acceptable properties, supporting the feature of Claim 1, a Au:Al ratio of 3.66 or greater. It was also pointed out that the specification, as filed, contained such evidence. The specification itself teaches throughout that in all circumstances relative to aluminum, the ratio of Au:Al should be 3.66 or higher. See, *e.g.*, Specification Pages 3 and 5.

The specification beginning at Page 3 and throughout describes that the Au:Al ratio range of 3.66 or greater was selected because of its unexpectedly superior metallurgical performance. This ratio produces an alloy with sufficient gamma-phase compound according to the Au-Al phase diagram referenced therein, while allowing the gamma compound to precipitate along the fine alloy grain boundaries when annealing according to the invention. The balance of the alloy composition is stated to be either Pd or Pd and Ni.

It is further stated in the specification that at this ratio range, the alloy produced is stable and anneals at temperatures of 600°C, and is of sufficient toughness and

hardness that will not fracture by applying a load of 100 kg. These features are not suggested in the prior art.

Accordingly, it is respectfully submitted that the record amply demonstrates the criticality of the 3.66 ratio as in independent Claim 1 and the claims which depend therefrom; i.e., Claims 4, 10 and 11.

REJECTION OF CLAIMS 2 AND 3 UNDER 35 U.S.C. § 103(a) AS BEING UNPATENTABLE OVER JP '847 AND JP '729

JP '729 suffers from the following deficiencies. It uses a powder metallurgy technique that consists of compressing powders of Au and Al mixed together with other elements, such as Pd or Co, and sintering in an inert atmosphere or vacuum atmosphere. The physical property of such a product is different than the physical property of the alloy prepared by a molten-phase method of the present invention. The powder metallurgy-based product is more porous and severely lacks homogeneity. The JP '729 powder metallurgy-based product has diverse mechanical properties based on lack of homogenization, as compared to the alloy prepared according to the molten-phase-based product of the present invention.

In order to fully emphasize this feature, Claims 2 and 3 have been amended to recite that the jewelry alloy composition is prepared from the molten-phase. Support for such molten-phase can be found at least at Page 2, Line 19 of the present specification.

REJECTION OF CLAIMS 5, 6, 8, 9, AND 13-15 UNDER 35 U.S.C. § 103(a) AS BEING UNPATENTABLE OVER JP '729

Claim 5 has been amended to recite the molten phase. Claims 6, 8 and 9 depend from Claim 5.

Claim 13 has been amended to recite the molten phase. Claims 14 and 15 depend from Claim 13.

For the reasons described above with respect to Claims 2 and 3, Claims 5, 6, 8, 9, and 13-15 are patentable over JP '729.

It is important to note that in all the embodiments, the Au:Al ratio should be higher than 3.66, leading to an important limitation on the weight percentages on other included metals, such as Pd and Ni, respectively being limited to up to 4% and up to 2% as set forth in Claims 5, 6, 8, 9, and 13-15. These amounts are not arbitrary and are set in order to obtain the desired Au:Al ratio, and are far removed from the 7-30% disclosed in JP '729. Clearly, limiting the amount of the additional included metal supports the criticality of the weight percentage and ratio of Au and Al. This feature is not otherwise achievable with another included metal constituting 7% or more of the composition. Thus, the important properties of the alloy of the present invention are only obtained in accordance with the limitations as set forth in the claims.

Finally, it should be noted that JP '729 suggests the inclusion of Co. Co was not used in the present invention because it does not dissolve into the alloy.

For all of the aforesaid reasons, it would not have been obvious to a person skilled in the art to reduce the amount of one or more additionally included metals below

the limit of 7% in order to achieve the desired color and durability of the jewelry alloy composition of the present invention.

OBJECTION ON THE BASIS OF INFORMALITY: SPELLING OF THE WORD "JEWELLERY"

It is noted that this specification contains the word "jewellery," which is the British variant of the American word "jewelry."

This foreign priority application, due to its origin, contains the British variant, which is perfectly acceptable according to Webster's Third International Dictionary, Unabridged. However, the Title of this invention has been changed and the claims have been amended to reflect the American spelling. It is respectfully submitted that no undue burden is placed upon the reader to maintain the alternative British spelling in the specification.

On the basis of the amendments contained herein, it is respectfully requested that this objection be considered resolved.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the

Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: 17 NOV 2003

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